

AMENDMENTS TO THE CLAIMS

Please amend the claims as indicated in the **LISTING OF CLAIMS** given below, which replaces, without prejudice, all prior listings of claims in the present application.

LISTING OF CLAIMS

1-21. (Cancelled).

22. (New) A system for imaging the sea bottom from a submerged position, comprising:
a source of pulsed light configured to emit a two-dimensional beam of pulsed light;
an aiming/directing device configured to direct the two-dimensional beam of pulsed light towards the sea bottom;

a solid-state detector having an internal two-dimensional array of individual photosensitive detectors configured to generate electric current signals representing a two-dimensional video image from the two-dimensional beam of reflected pulsed light; and

an image intensifier tube having active gating control of a photocathode bias voltage, the photocathode bias voltage configured to control the optical gain of the image intensifier tube and to selectively intensify or block the beam of reflected pulsed light to avoid the entrance of backscattered light, the control being based at least in part on a known time needed for the beam of pulsed light to travel to and from the sea bottom.

23. (New) The system of claim 22, further comprising:

a synchronization electronic device configured to control the image intensifier tube to allow only the entrance of light reflected from the sea bottom; and

a signal processing device configured to process the electric current signals received from the detector and to produce an image signal representing the sea bottom.

24. (New) The system of claim 23, further comprising:

a monitor screen configured to receive the image signal representing the sea bottom and to display a video image of the sea bottom

25. (New) The system of claim 22, wherein the source of pulsed light includes
a laser, and
a beam expander configured to receive light from the laser and produce the two-dimensional expanded beam.
26. (New) The system of claim 25, wherein the laser source operates in the blue-green region of the visible spectrum.
27. (New) The system of claim 25, wherein the laser source includes a diode-pumped solid state laser having an M^2 parameter close to unity.
28. (New) The system of claim 22, wherein the solid state detector is a solid-state TV camera detector and wherein the image provided by the image intensifier tube is coupled to the solid-state TV camera detector by electron bombardment of the array of individual photosensitive detectors of the camera., and wherein the solid state detector and image intensifier are integrated in a single device.
29. (New) The system of claim 28, wherein the solid-state TV camera detector includes at least one of CCD or CMOS detectors.
30. (New) A system for imaging the sea bottom from a submerged position, comprising:
a source of pulsed light configured to emit a concentrated beam of pulsed light illuminating a single point;
an aiming/directing device configured to perform a two-dimensional scan of a portion of the sea bottom with the concentrated beam of pulse light from a single location;
a single photodetector configured to generate a sequence of current pulses of temporal characteristics similar to temporal characteristics of a reflected pulsed light generated by the two dimensional scan; and
an image intensifier tube having active gating control of a photocathode bias voltage, the photocathode bias voltage configured to control the optical gain of the image intensifier tube and

to selectively intensify or block the beam of reflected pulsed light to avoid the entrance of backscattered light, the control being based at least in part on a known time needed for the beam of pulsed light to travel to and from the sea bottom

31. (New) The system of claim 30, further comprising:

a synchronization electronic device configured to control the image intensifier tube to allow only the entrance of light reflected from the sea bottom; and

a signal processing device configured to process the electric current signals received from the detector and to produce an image signal representing the sea bottom.

32. (New) The system of claim 31, further comprising:

a monitor screen configured to receive the image signal representing the sea bottom and to display a video image of the sea bottom

33. (New) The system of claim 30, wherein the source of pulsed light is a laser.

34. (New) The system of claim 33, wherein the laser source operates in the blue-green region of the visible spectrum.

35. (New) The system of claim 33, wherein the laser source includes a diode-pumped solid state laser having an M^2 parameter close to unity.

36. (New) The system of claim 30, wherein the aiming/directing device includes at least one of galvanometric mirrors, electro-optic deflectors or acousto-optic deflectors.

37. (New) The system of claim 30, wherein the photodetector includes at least one of a photomultiplier tube, a photodiode or an avalanche photodiode.